MONTHLY WEATHER REVIEW

METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR MARCH 1943

[Climate and Crop Weather Division, J. B. KINCER, in charge]

AEROLOGICAL OBSERVATIONS

NOTICE.—Effective with the December 1942 issue, the publication of table 1 (RAOB summaries) was discontinued indefinitely.—EDITOR.

Table 2.—Free-air resultant winds based on pilot-balloon observations made near 5 p. m. (75th meridian time) during March, 1943. Directions given in degrees from north ($N=360^{\circ}$, $E=90^{\circ}$, $S=180^{\circ}$, $W=270^{\circ}$). Velocities in meters per second

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Surface	31 31 31 19 17 15 11 10	266 287 274 291 302 302 310 314	2.7	30 30 30 29 24 15 11	287 282 266 257 278 280 282	3. 8 4. 2 6. 2 9. 3 13. 1 13. 7	29 28 27 25 23 19 16 15 14	236 240 247 250 269 270 271 278 273	3. 8 6. 3 8. 1 10. 0 10. 4 13. 9 16. 4	29 29 28 23 18 14	269 281 285 288 293	7. 0 9. 2 11. 1 12. 6 13. 6 11. 9	28 27 25 22 20 19 16 15 13	142 210 238 258 258 266 265 271 275 279	2. 0 3. 0 5. 0 6. 3 7. 7 9. 8 11. 3 13. 4 15. 2	29 28 28 26 27 17 17 15 3	280	4. 5 5. 7 8. 7 11. 7 14. 2 13. 9	31 31 31 30	190 232 246 267 284 286 289 289 304 307	0. 2 1. 5 3. 1 4. 2 5. 3 8. 8 11. 1 13. 5 15. 8 20. 5	27 24 24 22 21 20 15 12	. 141 239 239 264 269 266 265 278	9. 7 12. 2 14. 5	31 30 27 25 21 17 16 11	309 250 231 237 249 263 289	1.6 1.9 4.0 5.0 6.4 6.0 6.7 8.3 11.7	31 29 27 22 18 18 15 14 12 10	212 215 242 243 258 275	1.6 2.2 2.5 3.5 4.2 6.0	28 21 17 16 15 12 12	117 154 307 317 291 277 291 286	1. 2 0. 7 3. 7 5. 9 7. 2	29 28 22 20 19 18	280 283 290	2. 2 3. 0 3. 9 6. 9	26 23 21 17 16 11	281 279 281 276 283 280	4.1

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Table 3.—Maximum free-air wind velocities (m. p. s.), for different sections of the United States. Based on pilot-balloon observations during March 1943

		Surf	ace to 2,	500 me	ters (m. s. l.)	E	etween :	2,500 and	1 5,000	meters (m. s. l.)		A	bove 5,00	0 mete	rs (m. s. l.)
Section	Maximum velocity	Direction	Altitude (m) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m) m.s.l.	Date	Station	Maximum velocity	Direction	Altitude (m) m. s. l.	Date	Station
Northeast ¹ East-Central ² _ Southeast ³ North-Central ⁴	46. 0 40. 0 30. 0 47. 6	w. wsw. w.	2, 180 1, 650 1, 550 820	17 6 3 30	Toledo, Ohio	54. 6 50. 0 49. 0 62. 9	wsw. wsw. w. wnw.	5, 000 4, 700 4, 840 5, 000	2 7 3 26	Caribou, Maine Washington, D. C Atlanta, Ga International Falls, Minn.	70. 0 73. 0 65. 5 63. 0	sw. w. wnw. wnw.	8, 380 8, 360 11, 600 5, 020	1 1 23 26	Caribou, Maine. Huntington, W. Va. Tampa, Fla. International Falls, Minn.
Central 5South-Central 6_	62. 0 42. 5	ssw. sw.	2,380 1,200	30 15	Dodge City, Kans Oklahoma City, Okla	54. 4 44. 2	w. w.	2, 550 4, 810	17 16	Des Moines, Iowa Oklahoma City, Okla.	59. 6 64. 0	sw. wnw.	10, 560 9, 690	19 3	Wichita, Kans. Oklahoma City, Okla.
Northwest 7 West-Central 8. Southwest 9	47. 4 36. 4 48. 2	wnw. w. sw.	2, 260 2, 480 2, 290	30 8 18	Billings, Mont Cheyenne, Wyo Winslow, Ariz	53. 0 45. 9 62. 0	wnw. wnw. w.	4, 420 5, 000 4, 800	12 14 15	Billings, Mont	70. 0 63. 0 68. 1	nw. wnw. wnw.	9, 330 10, 330 10, 570	15 21 5	Tatoosh Island, Wash. Cheyenne, Wyo. Las Vegas, Nev.

Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and Northern Ohio.
 Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.
 South Carolina, Georgia, Florida, and Alabama.
 Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.
 Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.

RIVER STAGES AND FLOODS

By BENNETT SWENSON

Following the driest February of record, with only three States having as much as normal precipitation, March was above normal except in the Northeastern States and in most of the Plains States. The western Lake region, most of the Ohio Valley and a large southeastern area had a considerable excess of precipitation. The March average for the entire country was 2.78 inches, or 2 percent above normal. This was the first month so far this year with as much as normal precipitation. The Nationwide average for the first quarter of the year was 88 percent of normal with some of the interior sections having had only a little more than half of the normal.

The temperatures during March were well below normal over most of the country, the only sections having above normal being the Middle Atlantic States, the Pacific coast and the far Southwest. The subnormal temperatures were most pronounced in Montana. However, in that State, the weather changed abruptly in the last week of the month and unseasonably high temperatures and chinook effects melted the snow at lower elevations in the Missouri Basin. This snow melt produced the highest discharge of record at Bismarck and the highest stages since 1881 were experienced in the Missouri as far downstream as below Omaha, Nebr., in April.

Floods were widespread from heavy rains in the Gulf States, the lower Ohio River and tributaries, and in California. The rapid melting of the low-altitude snow cover in Montana and North Dakota caused destructive ice jams and floods in the upper Missouri Basin.

St. Lawrence Drainage.—Minor floods occurred in the Grand and Saginaw River Basins in Michigan and in the Maumee River at Fort Wayne, Ind., during the month. Damage amounting to about \$50,000 was reported in the Grand River Basin.

The rivers were above normal from rains early in March. Heavy rains averaging 2 inches fell over most of these watersheds on March 15 and 16. These rains, combined with moderately high temperatures on several days, caused the ice to break up and the rivers to rise rapidly, reaching near or slightly above flood stages. The Childs6 Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western

MINSISSIPPI, ALBORDA, Tennessee.
 Montana, Idaho, Washington, and Oregon.
 Wyoming, Colorado, Utah, northern Nevada, and northern California.
 Southern California, southern Nevada, Arizona, New Mexico, and extreme west

dale Dam on Rogue River, a tributary of the Grand River, gave way on March 16, resulting in overflow at the confluence of the Rogue and Grand Rivers

Atlantic Slope Drainage.—In New England, precipitation was light during March. However, snow melt in the lower elevations caused rises in the streams to moderately above normal except in northern Maine. At Concord, N. H., the ice in the Merrimack River broke up on March 26 and in the Connecticut the ice began moving out on the 13th. An ice jam formed in the vicinity of White River Junction, Vt., causing the stage to go slightly above flood stage there on March 13 and again on the 19th.

Moderately high temperatures on the 15th-16th caused some melting of the snow cover in the Mohawk River Basin. Numerous small ice jams formed on that river and Schenectady, N. Y., experienced a slight amount of flooding on the 17th.

A rise occurred in the upper reaches of the Susquehanna River on March 16-17. The rise, which resulted chiefly from snow melt in the portion of the North Branch of the Susquehanna in New York, caused moderate flood stages

at several points, mostly confined to New York. Light floods occurred in most of the streams of eastern North Carolina and South Carolina, and in the Savannah River from frequent rains during the month. No damage of consequence resulted.

Moderately high floods were experienced in the Altamaha River system. Several periods of heavy rainfall occurred over the basin during the month, but none were of flood producing proportions until the heavy rains of the 17th to the 22d. On the morning of the 17th the precipitation averaged about 1 inch in the upper Ocmulgee River Basin, and slightly less than 1 inch in the upper Oconee Basin. Rains of over 1 inch were again reported on the 18th. During the period, 20th-22d, rains in the Ocmulgee Basin averaged 2 inches, and in the Oconee, 1.5 inches. This latter period of precipitation was sufficient to produce stages ranging from 3 to 5 feet above flood stage in the Ocmulgee, and from 9 feet above at Milledgeville, Ga.,

to 3 feet above at Mount Vernon, Ga., in the Oconee.

East Gulf of Mexico Drainage.—Heavy rains occurred on the 5th-6th, and in the northern portion on the 11th-12th. These rains were followed by unusually heavy falls